

Note Book.

Nov. 4 - Nov. 30 - 1929

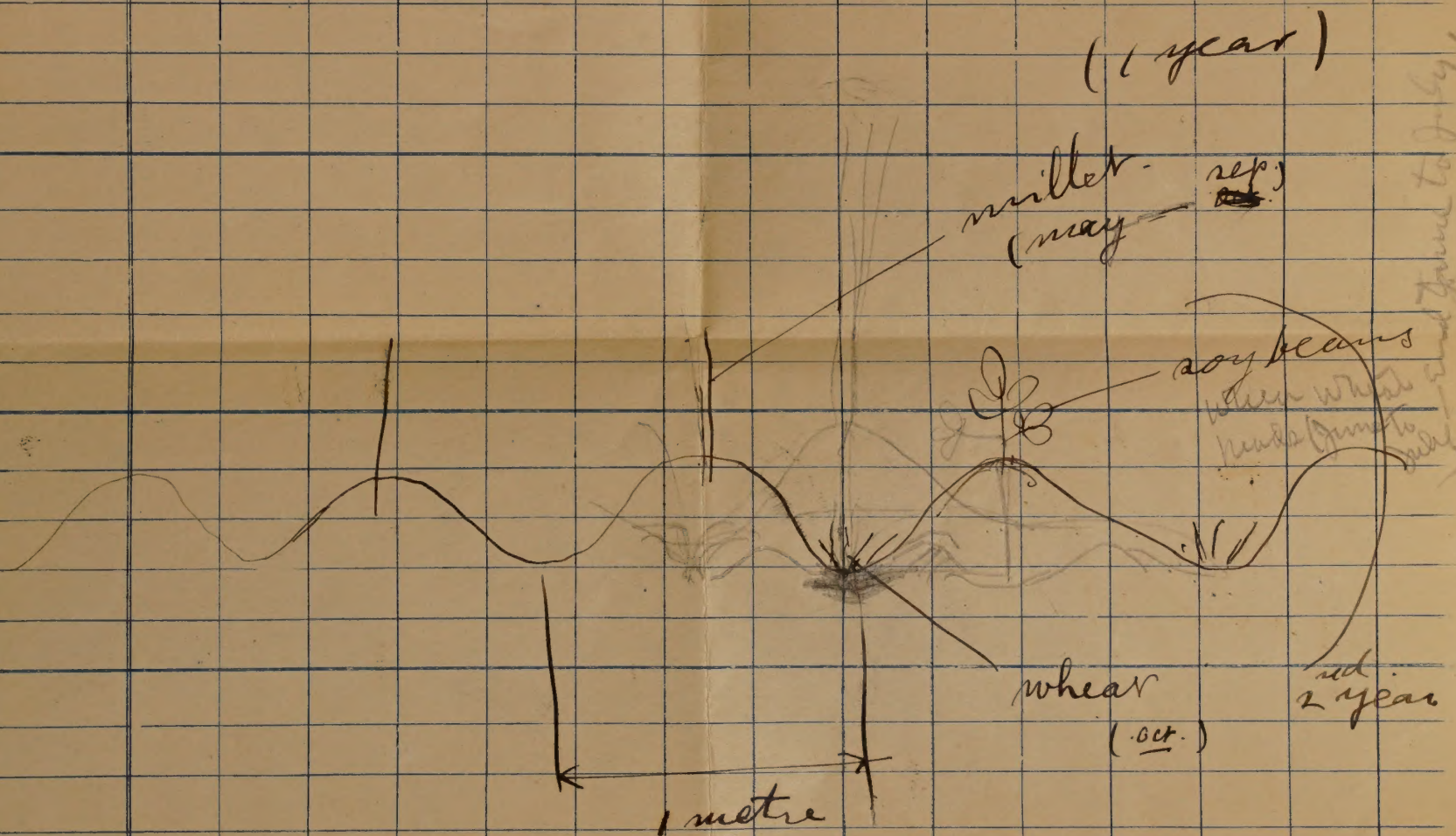
Japan

W. J. Morse.

Lily bulbs
Onions
Tree buds
Burdock
Yams

~~Written up~~

Shanin - 3 crop - 2 year method.



...

20

mill.

1000

Mushrooms - 43319

Tree leaf buds - 43320

used for seasoning soups
and for garnishing

Celery - 43321

different from ours 43322

Spinach - 43323

Bamboo Shoot - 43324

dried petals of Chrysanthemum - 43325

used for garnishing &
for soups

Fern fronds - 43326

used as vegetable

Wdo - 43327

used cooked and as salad

Horse radish - 43329

used for forcing and for

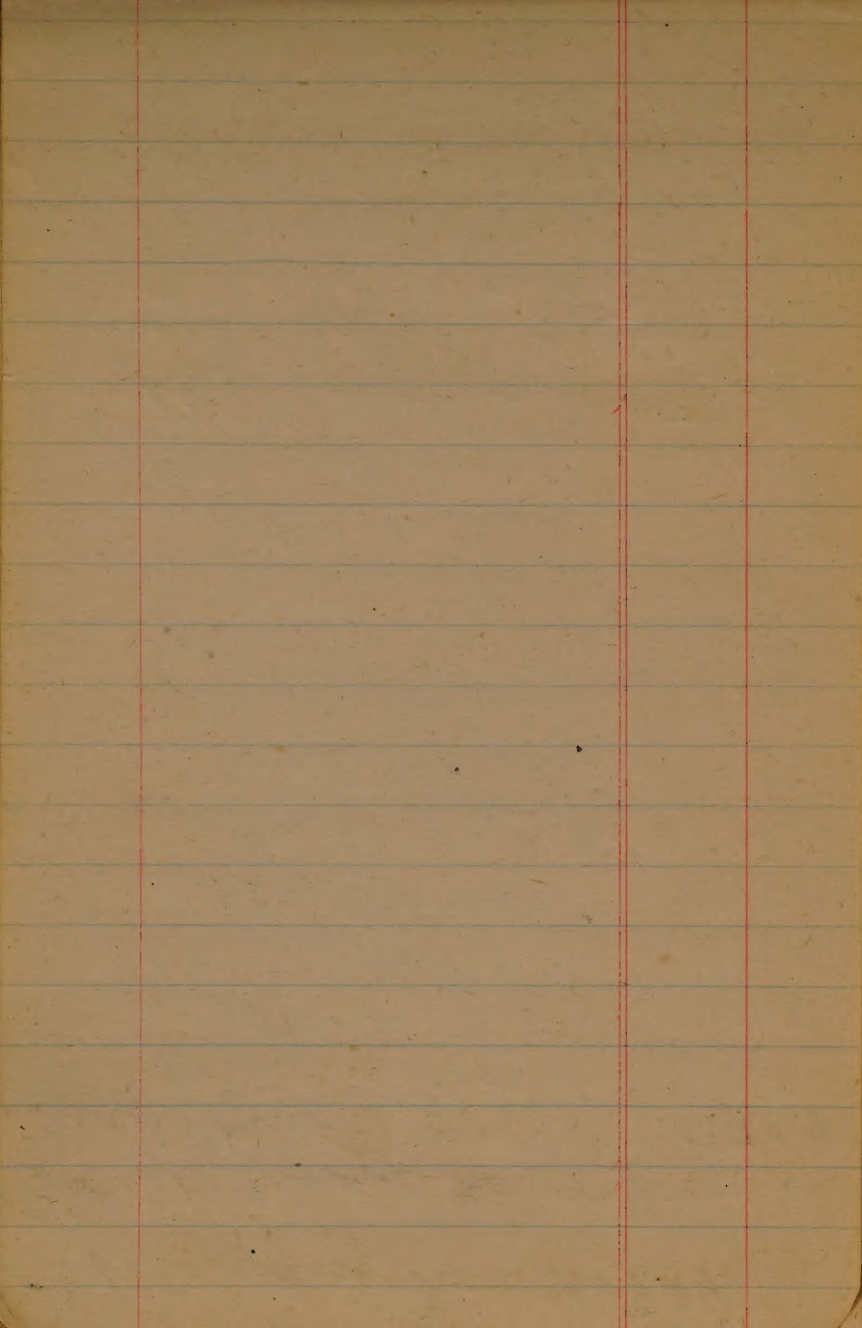
candying

Japanese common forcing.

43330

Forced ginger shoots 43331

Russet pear — 43333



Monday, Nov. 4, 1929.

Cool and clear	—	Singen	
Left Keijo	—		2.30 AM
Ar. Singen	—		8.45
Bus fare			15
Left Singen			10.26 AM
Ar. Jinsen			12.25 P.M.
Ry. fare Keijo & Singen (3)			60
" " Singen to Jinsen			
Tr. Jinsen Kamin-jinsen	P.M.		5 50
Ar. Keijo	P.M.		6 45

Ry fare Jinsen to Keijo

2 boxes of soap

cake (Almen) at 60 each 1 20

Left for Singen to attend
Korean farmer's market
day which is held four
times a month. The
market is held outside
the large gate and near
the wall. We went by

Went from the Sungen Station
and found the market
place to consist of a large
area and mostly low
grass thatched open sheds.
We found that only a little
of the grain had arrived as
yet and this consisted
entirely of rice. All kinds of
vegetables were on sale
and in addition merchants
of all kinds had their wares
displayed on the ground
within the sheds and
also outside.

We found that the grain
would not be coming
in until about noon so
had to leave to catch the
10.24 train for Jinsen
which is rather a large
day train shipping center.

We arrived at the port
Jensen about 12.35 P.M. and
after lunch went to the wharves.
Office of Grain Investigations to
investigate transportation of
grains especially rice and
soybeans.

Soybeans are graded into
5 grades - Excellent - 1-2-3-4,
Organization controlled by
Chosen Government. C

Beans coming within these
five grades can be exported or
transported. The grades are
decided upon each year by
a meeting of the Chief Directors
at Keijo once a year with
the Chief Director in charge.

Samples of different varieties
are then examined and

The grade decided upon.
This port, Jinsen, is the
principal center and has 21
branch offices in the
Kekido prefecture which are
located in the principal grain
producing centers. This
office also examines the
sack for grain. The 21 stations
which pass the grain at their
places allows the grain to be
transported anywhere.

Jinsen is a foreign port
center for farm products.
Of any question, the chief
office again passes upon
the grain fixed by the branch
station.

There were shown samples of
excellent - 1 and 2 grades. The
excellent grade was slightly
more not pure as the second

varied in texture color. No
attention is paid to purity
of variety. Seed first examined
for quality - uniform of size
of seed and glossiness, and
free from trash also moisture
determination. The moisture
is determined by chewing or
by feeling with hand. Hoffman's
machine is also used for
moisture determinations.
Weight of the sample is also
taken into consideration of the
grade. After judging the
sample by the outward
qualities, the weight and
measurement are taken up.
Two bushels standard
measurement which should
weigh 17 kams.

Purple spot on seed does not
affect grade as the beans with
purple spot are considered all
right for Tokyo, Shoyu, and
miso manufacture.

In Kelside only two varieties,
Chotan and Rensin - are
grown for seed and are
passed through this port.
No blacks, browns, or greens
are grown in sufficient
quantity by farmers to
sell and are mostly grown
for home use.

Soybeans from Japan go
principally to the main
island for making miso,
bean curd and soy sauce.
Urgium farm products of Korea
were soybeans and beef cattle.
Other farm crops imported
originally from China
and Japan,

Largest and best quality varieties grown in the northern half of Korea. In southern part smaller varieties and of poorer quality produced. In extreme northeast and along the Manchurian boundary, the Manchurian varieties are grown.

Near Tansu district, there is grown a variety, called Greenish White - Usua-o - especially for green marrow. It has greenish white seed and used greatly in Koryuho Island for green marrow. It has a bushy habit and especially leafy. After our visit with the grain investigation.

officers we were taken
by Mr. , chief director
to docks that we might
see the inspection as well
as take photos - still and
movies of the loading on
ships and the testing and
unloading of cars. We were
able to see large quantities
of soybeans in steel straw
sacks in the warehouses,
in racks outside, and
in freight cars. The soybean
sacks were marked with
red inspection marks while
the rice sacks were marked
with green. Movies were
taken of unloading a car,
taking out samples from
the sacks and loading them
on an ox cart. Another
movie was taken of unloading

a car and piling up.
Another movie was taken
of the loading of a vessel
with soybeans.

After going from the
wharf we went to the
Park to see if it was
possible to collect any
seed. The park was rather
poor picking so we decided
to walk to Kani-Jinsen -
Upper Jinsen - a short
distance from Jinsen. On
the way we found a species
of *Lespedeza* growing on a
dry rocky hillside. It was
the only sort of growth on
this place. The plants were
from 18-24 in. high, very
branching and had wide

Excellent growths under such
adverse conditions.

Going through the streets
of Kani-Jinson we saw
and purchased some
varieties of soy beans which
looked quite different
from any purchased
before. They were obtained
from small stores.

Tuesday, Nov. 5, 1929.

Kejo, Chom.

Cool and cloudy.

In the morning, worked
on expense accounts
and also on seed notes.

Wednesday, Nov. 6, 1925.

Keigo, Chosen

Sisyrinchia yueki (1925)

Southern section of Chosen in
Heishanondo - prefecture - ~~Japan~~^{2nd}

Flowers very profusely. Very late.

Doesn't mature seed in Keigo.

Left about 9 A.M. for the
Chosen Government Forest
Reservation and Experiment
Station which is about two
miles from the East Gate
of Keigo.

We met Mr. who
is one of the Forest Engineers
here and taken in charge
by Mr. who took us
about the grounds and
explained to us the
problems of forestry
planting on the poor

gravelly soils. Pines
(Korean) were being grown.
The forestry division has
charge of the Lespedeza
and ~~also~~ many species,
especially the woody
ones - *L. bicolor* - *japonica*
and *L. japonica*. The
Lespedeza are used not
only for their soil building
but also for keeping the
soil from washing and
the stems used for
basket making, fences,
etc.

We were given a
publication on *Lespedeza*
of Japan and Korea
written by Dr. Nakai.
This bulletin contains the
botanical descriptions of about
30 species of *Lespedeza* growing

in Japan and Korea. The
esperanzas for the introduction
of the bush woody types. A
copy of this publication was
also obtained to send Dr.
Pieters.

The forestry division is
especially interested in
obtaining grasses and legumes
that they can grow on these
poor gravelly soils. Kudzu
has been tried but the soil
is not sufficiently deep
for the Kudzu roots. On
deep fairly fertile soils this
plant makes very abundant
growth. The station would be
glad to obtain seed of any
kind that would aid them
on these poor soils to keep

them from washing and also
bring up the fertility.

After lunch we were taken
about the botanic gardens
by Dr. , and shown
the native Korean trees and
shrubs. We were permitted
to collect seed and
secured seed of a considerable
number of ornamental
shrubs and trees. After
our trip through the
gardens we visited the
herbarium room of
Dr. , and found that
he had many thousands
of herbarium specimens.
Each specimen on the sheet
was slipped into an oiled
packet.

We then went about the

woods and fields of the
forest reservation and
collected seed of such wild
species as we could find.

Seed of three species
of herbaceous legumes were
collected. These undoubtedly
will be of interest to Dr. Pieters.

The wild soybean was found
growing quite abundantly
through the woods & fields.
Considerable seed was
gathered in the pod but
when picked out at night
was found badly infested
with the grub borer which
attacks soybeans so much
in Hokkaido. Only a few
good seed were obtained.
Some seed was secured

of a very viney *Phaseolus* sp.
which Dr. [] called the
wild adzuki bean. This
had brown seed, and the
pods resembled adzuki
bean pods. Another very
viney *Phaseolus* sp. was
found with very narrow
pods and with black seeds.

A short podded legume
with pods (straw yellow)
like a vetch pod. The seed
is much flattened and
mottled olive and black.

Seed of a wild *Desmodium*
sp. growing very abundantly
was obtained. The plants
ranged from 30-40 in. high
and may be of value for
grass manure.

The pods of the three
above *Phaseolus* spp. were

found to shatter very badly and to be affected by the pod borer but not to the extent as the wild soybean. The wild soybean pods shatter very badly.

On the way back to the car we passed Korean stores and found a fine variety of soybeans and adzuki beans which we purchased samples of.

At the forestry station we were promised seed of various trees and ornamental shrubs and of all the legumes.

In the morning wrote my introduction cards for samples of seed

collected during the day.

Thursday, Nov. 7, 1929.

Cool and clear.

Left Keijo

8 50 AM

R.R. fare " To Rensen

1 20

Arr. Rensen

10 54 AM

3rd ¥ 14.70 per Tokin

2nd ¥ 15 - 15.10 " "

1st " "

Ex - No excellent beans received.

Rensen soybeans about here
do not get much higher than
Excellent grade. Most of beans
in Rensen region are in the
3rd grade.

Left Zenkoku

6.54

Arr. Keijo

8.55

Ry fare Zenkoku to Keijo (B) 1 08

St care fare, Keijo

" " " Keijo.

Left at 8.50 A.M. for
Rensen where Dr. Nagai

advised us to go to see
saymans.

We first went to the govt.
quarantine office where they
showed us the different
grades. The two inspectors
were going out to different
brokers to inspect seed
brought in by farmers.
At the first place we were
shown the method of
sacking and tying. Movies
and stills were taken. We
then went to a broker's
where a large number of
sacks were being inspected,
marked and sealed.
Movies and stills are
taken of these. Samples
are drawn by the inspector
after which sacks are

stamped with red seal
showing the grade of the
beans. A paper seal is
then placed showing the
seal of the inspector, the
date and the quantity of
beans in the sack. The beans
are then hauled to the Ry
station for shipment. One
sack was gined and
then refilled by measurement.
Movies and stills were
also taken of this.

We afterwards visited
the Village Agr. Society's
office but found all the
head men out in the
field. This Society is
going to try to collect
samples of varieties

grown by the farmers
in their territory.

After this we decided
to walk to the next
station, Zengkoh, to
get any bean pictures and
collect samples of seed.
We were able to get
some samples from a
farm yard in back of
the lunch room where
we had lunch.

On our way to Zengkoh
we observed several
threshing scenes of soy-
beans. All was being
done with flails. We
also saw the cleaning
of millet and rice with
wail fans. Several scenes
of threshing and cleaning
adsuik beans were noted.

All threshing was being done on hard dirt floors in the farm yards. The summer crops were tied in bundles and placed in tall piles about the farm houses and yards. Some very interesting and picturesque farm scenes were noted along the way.

We stopped at one place where 3 or 4 farm houses were close together to observe a threshing scene. Inspecting some bundles of soybean plants we found several varieties, black, brown, yellow, and bicolored. Two especially outstanding varieties were a large black and olive

green variety, shape and size of the Hakto, with pods $2\frac{1}{2}$ - $3\frac{1}{2}$ inches long. There was also a large yellow variety with the seed coat much split. These are said to be native Korean varieties and are not sold commercially.

After this visit and obtaining samples we proceeded toward Genkoku. Along the path on the railway right of way we found seed of a *Liriodendron*, wild lupine, and several *Eurostium*, and *hemierocallis*.

Took the 6.50 train at Genkoku and arrived at Keijo at 8.50.

More Chinese were observed on this train than any train I have yet been on.

Friday, Nov. 8, 1929.

Cool and clear. In the morning wrote up seed samples collected in the vicinity of Rensen. Also worked on expense account and itinerary. After lunch went out to the forestry reservation to collect seed of wild soybean and other wild legumes. Re seed of the wild soybean which was collected recently on this reservation was badly infested with the pod borer and only a few good seed obtained. The seed of this wild soybean is mottled. In addition to the wild

Soybeans, seed was collected of three other wild legumes.

Ten samples of beans were received from the Korean Fair Exhibit, through some misunderstanding instead of giving me ~~the~~ a small sample of each of the varieties of soybeans, wing beans, adenbi beans, and millet we exhibit we received only 2 varieties of each of soybeans, wing beans, adenbi beans, peas, and field beans.

Mr. Soyetake explained to them the mistake and the chief of the Agr. section promised to send to each prefecture and

have the varieties of
each sent us.

In the evening worked
on expense account
and writing up seed
samples.

On the way to dinner
I met Mr. Oda, secretary
of the Governor General
who inquired as to
the seed we wanted at
the Korean Fair. Upon
learning of our receiving
ten samples, he said
he would get in touch
with the man in charge
and see what was wrong.
He promised to call
me by phone in the
morning and let

I've known the exact
situation and assured
me that the matter
would be taken up
with the different
prefectures to get us
the varieties desired,

Saturday, Nov. 9, 1929

Cool and clear. In the morning wrote up our samples and worked on expense account. About 10.30 went to the Governor General's Office to see his secretary, Mr. Ueda who took us at once to the Chief of the Agr. section, Mr. Soyetake and I found that they had already started a letter to the governor of each province to collect seed from the villages for us.

We asked that varieties of soy beans, mung beans, Adzuki beans, millet, kaoliang, rice, Buckwheat

barley, and wheat. We
advised that there would
probably be no cost but
if there were, the prefecture
would send in a bill.

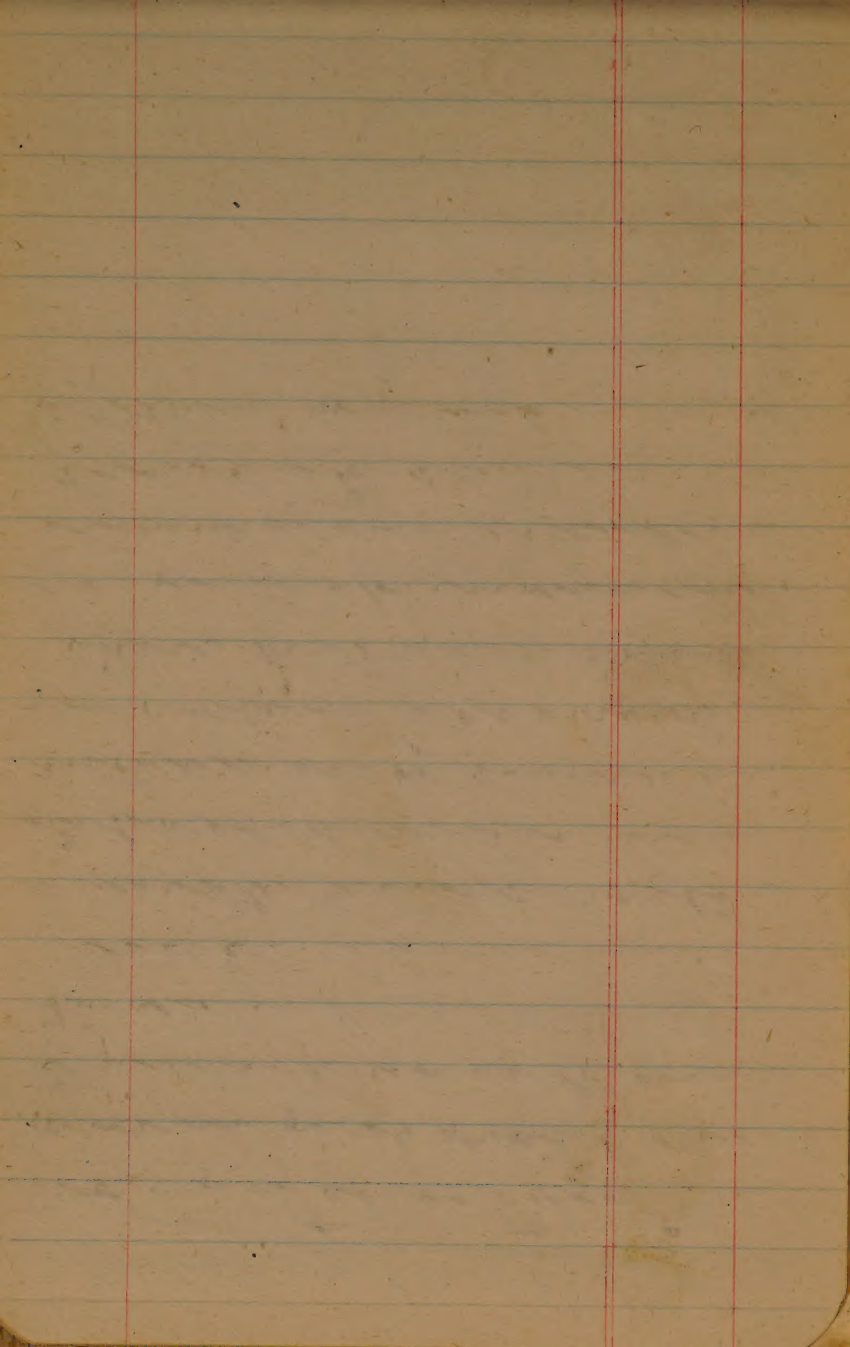
We offered to furnish
small sacks and will
give 50 for each prefecture.
13 prefectures - 650 sacks.

We went to a cloth
store to contract for
1000 small sacks -
joint size with drawing
strings. We found that
1000 of such bags would
cost 35 yen and
would take about
3 days. These of course
would be hand work.

After coming back to
the room wrote up
samples of seed to

complete a third
parcel for package,
3 parcels were sent
to day.

In the afternoon Mr.
Smyth and Dorset
left for a small island
northeast of Jinser
to collect wild persimmons
where they were said
to grow abundantly.
Worked on account
during the
afternoon and evening.



Sunday, Nov. 10, 1929.
Cool and clear. In the
morning worked on
expense account and
finished up about
noon.

Wrote letter to Mr.
Cox relative to the
items suspended in
my April account.

Also wrote Joe Mahoney
regarding suspended
items, and answered
other letters of this.

Official postage 56

In the afternoon
went to the Imperial
Shrine to view the
chrysanthemum show.
We saw some very
beautiful creeping

forms, and some
very large single
types.

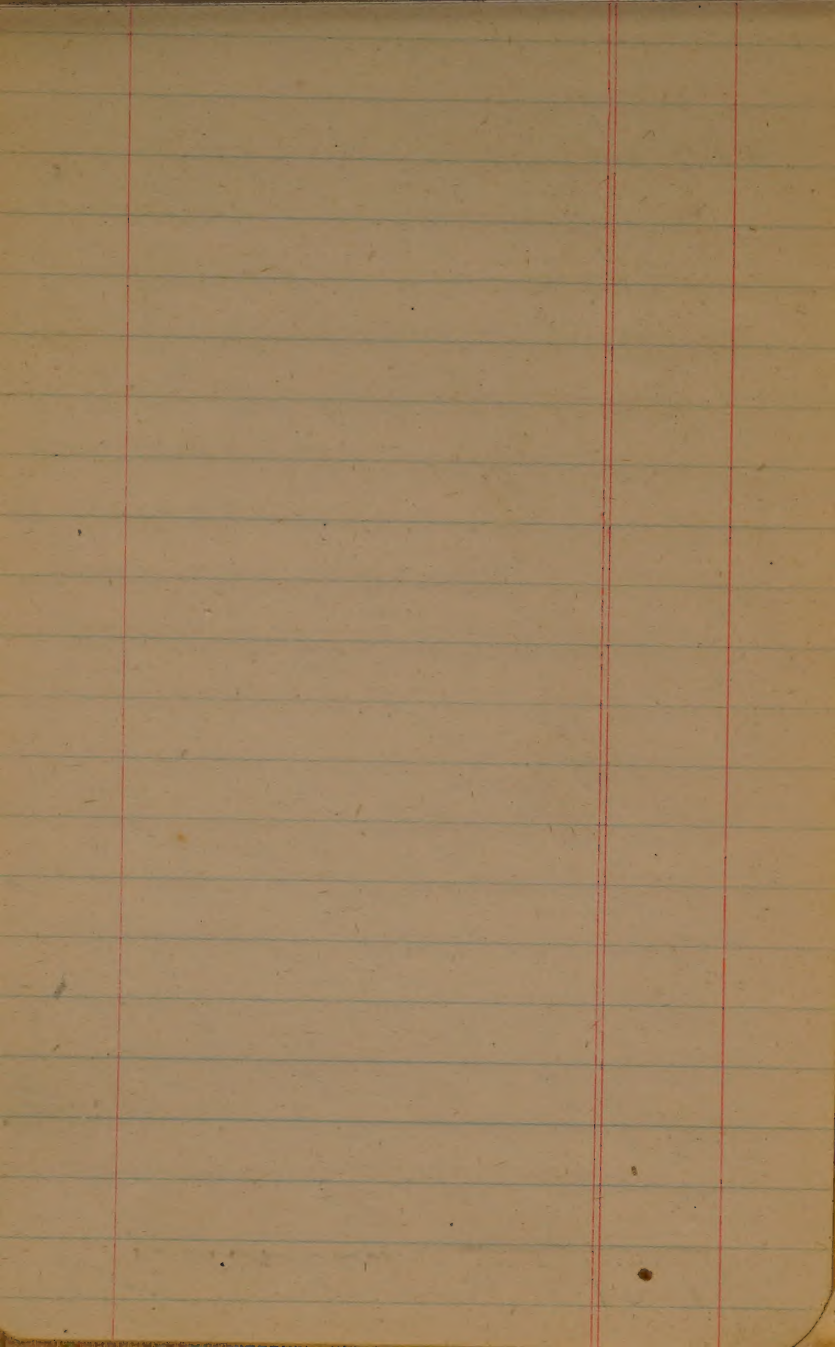
In the evening worked
on the names of Korean
varieties of mybomas
for a guide to check-
ing the varieties we
have secured so far
and the varieties we
desire.

Monday. Nov. 11, 1929.

Cold and cloudy. In the morning worked on soybean notes for Korea, listing Korean varieties.

In the afternoon wrote official correspondence and worked on soybean notes for Korea.

In evening wrote up introduction cards for the samples of soybeans, cowpeas, adzuki beans, mung beans, buckwheat, and kaoliang from the island of Kōkato by Sugitake and Dorsett where they went to obtain seed and scions of the wild persimmon which is said to grow rather abundantly on this island.



Tuesday, Nov. 12, 1929

Clear and cool. In the morning went out to the Forestry Station to take letter having list of seed of different trees, shrubs, and Lеспедезас wanted. The assistant director told us that more than half of the Lеспедезас contained in the station's Lеспедеза Bull could be obtained and the other species would be secured this next fall. All the seed desired will be sent to our Tokyo address. We were also given a list of seed of trees desired by the Forestry station.

After our visit at this station we walked to the

prefecture experimental
farm to see about the
seed promised us at this
station. The assistant
director, Mr. , told us
that the seed would be ready
the latter part of the month and
it would be sent to our Tokio
address.

On our way back to the hotel we
stopped at a Natto factory.
This was at a home and the
business run by a Japanese
woman. The natto is put
both in rice straw bundles
and small boxes. We were
able to see a Korean boy
making the rice bundles.
We were invited into the
house and the woman
explained the method of
manufacture. It seems

that Natto is not used very extensively by Koreans. The use, however, is increasing. The woman sells about 500 bundles per day. Each rice bundle holds about two double handfuls of the natto beans which are rather slimy and without taste. Salt, soy sauce or some other flavoring is used in eating the beans. The lady has been in the business more than 20 years and has studied Dr. Hanagawa², of the Koddai station, bulletin on Natto manufacture. She agrees that the method of curing in the small wooden box

is the most sanitary but adds to the cost which the people do not like to pay. all the straw used by the woman is thoroughly washed and dried.

When the woman first started the manufacture of Natto she tried to help the Korean school boys by having them sell the product and divide the profit with them. But after receiving the goods they would never return. The same method was tried with Korean men but they also failed to return after selling the product.

A rice straw package of Natto that had been curing ten days and also a wooden package of Natto were given

me.

There is also another factory making matts in Keijo on a large scale. The product is said not to be so good and a smaller sized beam is used.

After our visit to the matts factory we went to a Korean shop to buy Korean Xmas cards. Then went to a Korean lunch room where we had oyster soup, good steaks with mashed potatoes, peas, and cabbage salad, rolls and butter for 50 sen.

After lunch we obtained the small cloth seed bags from the Korean dealer (1000 yb. bags with strings 35 yen) and took 750 of them to

Mr. Yamamoto, chief of the
Agr. section of the Governor Gen.
Office, has to send 50 ~~to~~
each of the prefectures (13 in
all) for seed of varieties of soy-
beans, mung beans, adzuki beans,
rice, kaoliang, millet, buck-
wheat, barley and wheat. As
it will take 3-4 weeks to get
in this seed, it will be sent
to our Tokio address.

After dinner, wrote letter
to Carter regarding soybean
introductions, products, and
work. Also wrote up some
seed samples.

Wednesday, Nov. 13, 1929.

Cold & clear.

Left Keijo

9.05 AM

Arrived Shariin

1.41 PM

Fare 2nd C. Keijo to Shariin

St. car fare sta. to hotel.

The way is narrow
that nearly all crops have
been harvested and were
in large piles or racks about
the farm houses and yards.
Several scenes of flailing
and soy beans were noted.
In one or two instances
soy beans in bundles were
seen being loaded on
oxen in the field. Only
two fields of soy beans
were seen and these
were being pulled.

at some station large
piles of rice sacks of soy-
bean seed were noted.
These had been inspected
and had the official
red stamp on the bags
and the inspector's paper
tag on.

3 crops with 2 year method.
Plant Italian millet in
May of 1st year - then in fall
plant wheat. In spring
when wheat is heading soy-
beans are planted.

Prof. Takahashi, who is charge
of the station has tested out
1200 lots of soy beans which
he found to represent 500
varieties, as the station they
now have under test about
200 varieties.

Another method is to
sow in rows 3.3 ft. apart
on ridges ^{or} sowing beans,
soybeans, adzuki beans,
buckwheat, ^{or} and radishes
after the winter crops of
wheat.

Another method is to
sow soybeans in hills 3.3
ft. apart and Italian
millet between the soybean
hills.

All summer crops are
sown on ridges while the
~~summer~~ crops are sown
in furrows.

In fertilizing the crops only
the wheat is fertilized with
straw ashes, cow manure,

a sort of compound.

~~Hasland Dr. Goodrich~~

N. Takahashi

West Korean Agr. Exp. Sta.,

Shariin, Korea.

Soybean note book =

Soybeans - Varieties

Publications (3)

Amer. Soybean Association

Our Soybean list

Winter hardy crops - vetches,
alfalfas - early varieties of
peas.

Arrived at Shariin
at 1:41 P.M. and went to
dinner where Mr.
Yoshikawa has reserved
three rooms for us. We
then went to the office.

station, where we met
Mr. & Mrs. Cartwright, Mr.
Clark, and Mr. Goto.
We then met Dr.
Takahashi, director of the
station who is doing
considerable work with
soybeans and did much
work on breeding and
testing Korean varieties
at the Sungen station.

We were shown the
samples of selections
and Korean varieties
that are now being
worked with - about 280
in all. Dr. Takahashi
promised to send us
seed of each of these

we were also shown
the type of plow used
by the Koreans in
plowing the land for
their crops.

Information was also
given us as to the methods
of cropping in this
section.

Sta. about $\frac{1}{2}$ mile from
town and met Mr. Clark,
Mr. Cartright, Mrs. Cartright
and Mr. Yoshikawa.

We were then taken to
the Director, Dr. Takahashi
who has done much
work in Korea with
soybeans. He has tested
out about 1200 sorts
from Korea and sorted
out 500 distinct sorts.
At the present time he
has under test over 200
varieties. Now he is
classifying at the present
time, He had small
trays with pods, seeds
and split seeds in

classify pods and seeds.
Many of the varieties
were badly mottled. He
had some excellent large
yellow seeded varieties.
He were provided seed
of each of the varieties
under test.

He was shown the
native Korean plow of
which a picture was
taken. In plowing the
soil is thrown in ridges
and in this region the
soybeans are sown on
ridges. The holes for
planting are made with
the heel, the beans
dropped and then covered
with the feet. No fertilizer
are used on the soybeans.
Neither is there any

cultivation giving to the
crop as weeds are not
said to be bothersome.

We were taken to a
small Korean village
near the station where
the farmers were threshing
and cleaning their ^{grain} crops. First
obtained a picture of
an old Korean and his
wife threshing out soy-
beans with a flail, he
also saw adzuki beans
being flailed out and
cleaned. Every farm
house had its stacks
of soy beans. The beans
threshed out by the

Korean and his wife
were a mixed bunch,
mostly brown seed much
like the Virginia, and
the plants would make
an excellent forage sort.

At several farm yards
the beans were threshed
out and the straw being
raked off. An old Korean
woman offered to show
us the cleaning so first
she used the tambor
basket, throwing the
seed in the air. Then
a young Korean with
a rice straw mat
between his legs operated
the mat as wings while
the old woman dropped
the threshed material
allowing the wind from

the rice mat operations
to blow the chaff out.

We went to another
farm house where
wheat was being ground
by a stone wheel driven
by a pony.

On the rafters of the
eave were noticed
several pineapple shaped
objects which upon
closer inspection proved
to be smashed soy bean
for making miso. The
beans are soaked, boiled
and then mashed
with a wooden stick
in a hollowed out log.



After washing

The beans are made
into the pineapple shaped
ball, strings tied about
it and then hung
to the rafters to dry
mold for making miso.

After leaving the village
we went back to the
station and looked
over the soybean varieties.
Dr. Takahashi promised
to show us method of
Korean plowing and
planting of beans so we
can take movies tomorrow.

Mr. Cuthright arranged
for us all to have dinner
together tonight and
have a sukiyaki meal.
We were served a buff
dinner, and for the
rice there were bowls

of roasted soy bean flour
with sugar. I should
judge about half and
half. This was placed
over the rice and made
a most excellent dish.
It certainly added to
the flavor of the rice.

If the rice were canned
and a little cream
added, I think it
would make an excellent
dessert that would
take in America.

Thursday, Nov. 14, 1929

Sta. Xii, Chosen. ^{well} clear.
Cost of soybean meal for
fertilizer.

Soybean meal - Beans are
soaked a few hours before
boiling usually 8-10 hrs.
After soaking then drain
off water and boil over a
slow fire. Then boil early in
morning (9 or 10) and boil until
soft. Then leave in kettle
for 3 hours as it makes the
bean much softer.

Soybean general information
Western Korean Branch etc.
Data for Western Korea,
Time of planting - about
last week of May.
Rate of sowing 5 Shō (1/4 bu)

to $\frac{1}{4}$ acre.

Width of row - Sown on ridges
about 3.3 ft. apart.

Space between plants about
 $7\frac{1}{2}$ inches, 3 plants to
each hole.

Sowing method - Cattle
dot planting.

Fertilizer - Farmers do not
use fertilizer. Exp. Sta. use
phosphate 30 lbs. to $\frac{1}{4}$ acre,
straw ash 200 lbs. to
 $\frac{1}{4}$ acre, when soybeans are
sown alone.

Cultivation - Farmers do
not cultivate. At station
they cultivate 1st week of
June (thinning). Weeding
once 1st week of June and
2nd week 1st wk. of July.
Cultivations & weeding
made together.

Cultivations made with
Korean hoe (koma).

Harvesting made during
last week of September.

Plants are thoroughly
mature when harvested.
Method of cutting. Plants
are cut with sickles.

Roots are left in ground
for fertilizing the soil.

Plants are tied in bundles
and taken to farm yards
and piled in stacks or
ricks about the yard or
house.

Yields - When planted
alone, soybeans yield
1 koku to 1 to

(1.296 Koku) (1 koku = 5 bushels)

1,296 bush to $\frac{1}{4}$ acre
which is 26 bu. to the acre
for the best yield -

Early variety, large grain,
1,145 bush to $\frac{1}{4}$ acre.

bush. per acre.

Farmers about here
obtain (8 yrs. or over) $7\frac{1}{2}$ to
per $\frac{1}{4}$ acre. ($7\frac{1}{2}$ to 3,75 bush)

Farmers plant soy beans
by themselves with rows
3 ft. apart but beans
alternately



Varieties - Many varieties
of soy beans grown by the
farmers and all more
or less mixed. Farmers'
varieties generally named
according to color of seed,
use, size of grain, length
of season, taste, color of hilum,
and name of locality or

2 yrs' average gave 1.5 sho
per $\frac{1}{4}$ acre (5 sho - $\frac{1}{2}$ bu), The
beans plants are 6 ft. apart
and 3 plants a hill, Farmer
obtains 30% less in mixed
plantings of millet, the
rows are 3 feet apart. The
millet is planted April 25,
the millet yield 2.2 bush
per $\frac{1}{4}$ acre (11 bu per acre)

Mixed sowing soybeans,
of adzuki beans, mung beans,
blackheart, adzuki beans
6.9 sho per $\frac{1}{4}$ acre; mung
beans, 16.6 sho per $\frac{1}{4}$ acre;
soy beans 4.2 sho per $\frac{1}{4}$ acre;
blackheart 4.8 sho per $\frac{1}{4}$ acre.
In planting adzuki beans
20¢, mung beans and

Backward 10. Day hours 5.
ratio.

Left about 9. A.M. for
the West Korean Exp. Sta.
where Dr. Takahashi
arranged for a plowing
and seeding of soybean
demonstration for our
movie. At the station,
the big Korean plow draw
by two oxen was first
used and then a
smaller plow with one
ox. The smaller plow
is used on small
pieces of land and by
the Korean farmer with
a small farm.

Pictures were then taken
of two Korean women
planting soybeans in
a mixed planting

with Italian millet. The millet is planted in April on the top of ridges, and then in May when the millet is about 7 in. high soybeans are planted on the side of the ridge near the row of millet. About 3 seed of soybeans are dropped in holes about 6 feet apart. The holes are made with a short handled small hoe and also covered with it. The millet rows are about 3.3 feet apart.

The next method was where soybeans are planted alone on the

top of ridges. Holes are made with the heels, the beans dropped and then covered with the foot - 4-5 beans are dropped about 8 inches apart. The Korean farmer does no weeding or cultivation, nor does he fertilize the beans.

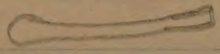
Movies were taken of these methods of plowing and seeding.

After the demonstration Dr. Takahashi made arrangements to have miso mash & soy sauce mash made by one of the Korean tenant farmers so that movies could be made. The demonstration

was to be at two o'clock.
Before lunch we walked
to the Top of Chajin
Fujis-San, and had a
magnificent view of the
surrounding country,
a long wide valley. Dorset
took two panoramas.

After lunch we went
back to the station with
Dr. Takahashi who took
us to the small Korean
village to see the making
of miso and soy sauce
mash balls.

The beans, ^{wild} yellow seeded
variety, are soaked over
night (at least 8-10 hours,
and then are boiled over

a slow fire for 3-4 hours, after which they are allowed to stay in the water for 2 or 3 hours. The water is then drained off, the beans are placed in a hollow mortar (generally in the Korean farm home a piece of log hollowed out at one end to depth of about 12-15 inches. The beans are placed in this and then mashed with a heavy stick, . The beans are not wholly ground up, that is fine. For some of the half beans appear in the mash. This mashed bean material is then placed in a bowl and made into a pineapple shaped mass. These

Fresh balls are placed
in a warm room for 2 or
3 days until the outside
has become crusted, a
little hard. Rice straw
ropes are then tied about
them and they are
hung up under the eaves
of the houses until
thoroughly covered with
mold. This takes from 4-
6 weeks, if the weather
becomes too cold, the
balls are taken and placed
in rice straw sacks
and placed in the house,
after thoroughly covered
with mold.

I'm making say same

sauce in the home $\frac{1}{10}$ to
bean mash ball (covered
with mold), $\frac{1}{40}$ to salt
and 2 gallons of water
are mixed in a crock.
This mixture is left
outside in the covered
jar from 4-5 wks. The
juice (soy sauce) is
then dipped off and
the remaining material
(called Tenyan in Korean)
is miso and used in
making miso soup. The
soy sauce is called
Kanyan in Korean.

Another form of miso,
called Tantsūyan in
Korean, is made directly
from the beans. The beans,
yellow, are soaked 8-10
hours. Then the water

drained off, and the beans
boiled 3-4 hours and
then allowed to stay
in this water 2-3 hours.
The boiled beans are then
washed and while being
washed, chopped up red
peppers, and roasted
wheat are mixed in
and all are thoroughly
mashed together. This
mass is then placed
in earthen jars and
set in the yard to cure.
It is said to take from
4 to 6 weeks, and some-
times more to cure, de-
pending on the weather.
These products, sauce
and 2 forms of miso
are generally made

in all Korean farm
homes. We tasted samples
and found the miso
with peppers a rather
hot product to eat.
It is said to be eaten
alone by the Koreans. The
other miso from which
the soy sauce had been
taken has a milder form
and is used entirely
in making soups. The
soy sauce was fairly
good, but somewhat watery,
not nearly so strong
or pungent as the regularly
soy sauce made
by factories and cured
much longer. In making
the soy sauce the bean
mass is not squeezed
but the juice merely
drained off. No rice

and still pictures were taken of the process of making the mash balls, and also of the fresh balls with mold (3-4 weeks old; soy sauce, and the two forms of miso.

After taking the pictures we went to the Station where Dr. Takahashi gave us considerable information on soy beans. He is making a study of soy beans for classification of Korean varieties.

He has divided the Korean varieties in the following color groups:
I - Green

II - Pale green

III - Brown

IV - Black

V - Yellow

VI - Indigo

VII - Bicolored

VIII - Special varieties.

He is also dividing the
seed into shape groups.
round, oval, oblong,
round flat, oval flat, and
oblong flat. Pod color
and size are also taken
into the classification.

Friday, Nov. 15, 1929.

Shariin. Chosen.

Uryama variety -

Ryokisetsu - variety - Two seasons
for early or late sowing

Uryama. Large yellow. Wood
or less mixed. Beans with
black, brown, pale, and light
brown hilum.

Ryokisetsu - medium-sized.
yellow; hilum brown. More
or less variation in shape and
size of seed. A few seeds noted
with black hilum.

Left Shariin

1.41^{0.14}

Ar. Kokai-Koshu.

2.12^{1.0}

Lo " "

6 35¹

Ar. Shariin.

7 50

2nd C. fore to Kokai-Koshu

2200 Koken
on banner.

and return.

just 1
canal,
dinner and

Commercial Farm - 3000 cho
" " ^{my own} 15000 Koku ^{yearly}
7500 bus.

$\frac{1}{4}$ bu. per $\frac{1}{4}$ acre for fl.

$\frac{1}{4}$ acre - 3 bus. yield

53400 Koku ^{my own and} produced on 3000 cho.

15000 Koku used for seed
in this farm.

5 sho per $\frac{1}{4}$ acre for planting
Soybeans planted - by 3 crops
- 2 year method.

Space between wheat rows.
Sark stamped with special green
trade mark of farm - cost 35 sen each.

Beans sell for 17. yen per Koku
for 1st grade. Each bag holds
2 bushel.

Write for Dr. Takahashi
bull or oil refractometer.
name of manufacturer. Price, etc.

In the morning we went

to the experiment station
where we met Mr. Takahashi.
We then went to the
quarantine office and
accompanied by one of the
inspectors we went to the
Korean farmers' pen
market day. It was market
day in Sharui. At the
first place was the fuel
market where many open
loads with many bundles
of pine, oak, and other tree
boughs were standing in
the open market.

We then went to the grain
market and found an
abundance of different
kinds of grain. At least

15% of the grain was
buckwheat and it is said
this region is famous for
its buckwheat and noodles
made from buckwheat.
Other grains were wing
beans, soybeans, adzuki
beans, millet, barley,
wheat, Kachang and
jowar and. Soybeans,
and millet constituted
a large per cent of the grains.
Samples of several varieties
of soybeans were purchased
from different farmers.

We then went to the
vegetable market where
chinese cabbage made up
the greatest percentage of
the crop. Radish, peppers,
potatoes, were much in
evidence.

We then went to the rice
market which was
quite extensive. There is
also said to be an animal
market.

After lunch, we took the
train for Kokaikosha to look
over soybean warehouses. We
went to three warehouses where
soybeans were being cleaned and
graded for shipment. Gravity
screens were being used. One
warehouse belonged to a
commercial firm which produces
15000 koku beans annually and
has 7500 bushels for the farmers
to plant.

Another farm with ware-
house produces 2200 koku

annually. The varieties of both places were of the Chotan introduced in this region about 1920. The larger form obtained the gold medal at the 1929 Korean Fair in Keijo.

Arriving at Shariin we had Dr. Takahashi and the grain inspector to dinner with us. Dr. Takahashi ordered buckwheat noodles for which this region is famous. They were light and finer than the buckwheat noodles we have had in Japan.

About Kokairakoten there are large apple orchards and the freight yards were piled high with boxes of apples for shipment.

Saturday. Nov. 16. 1929.

Left Shariin	8.50 AM
Arr. Keijo	11.30 AM
3 rd fare Shariin to Keijo	90

The Keian-nando Shuibyōjo.
(Agr Exp. Station)

Keijo, Chosen, Japan.
Winter green manure.
Hardly catches seed.
Early conglac.

30 varieties of myxomys from
this station.

Left Shariin at 8.50.
At the station, Mr. Dorsett
noted a suitcase with
the name Putz. A lady
sitting near arose as we
were looking and we found
that it was Mrs. Putz.

wife of Mr. Lutz of the
Union Missionary College
at Keijo. Dr. Park of the
Ohio state had given me
a letter to Mr. Lutz. So
we rode to Keijo.

Arriving at Keijo we went
to the Keijo exp. sta. hotel
where we obtained foreign
accommodations - double room
2 in room at 3 yen each.
European plan.

After tiffin we took a car
and went to the Missionary
college where we met Mr.
Lutz at his home. He took
us through some of the
Korean grain stores
where we purchased
several samples of soy-
bean varieties. We then

went to the boat where
on the Daido river
and found many beans
in storage. Sample of a
few kinds were given
us.

We then went to the
experimental station
outside of Heijo and met
the Director Mr.

He has tested 3 or 4 hundred
native Korean varieties.
at the present time he
is growing about 40
varieties and is to send
small samples to us
at Tokio. He is very
much interested in
green manures and
is at present growing

hardy vetch and alfalfa
obtained from Germany
the alfalfa is planted
in hills about 18 in.
apart and in rows about
3 feet apart. He desires
seed of hardy vetches.

At the home of Mr. Lutz
we were shown small
experimental plantings
of annual, biennial, and
yellow sweet clover, also
smooth and hairy
Peruvian alfalfa, and
hardy alfalfa from
Germany. The Peruvian
planted in Aug. was
erect about 16 in. high
while the hardy alfalfa
was low and spreading
and had no nodes
nearly the growth of

the Peruvian.

Mr Lutz expects to spend the next four months in traveling about Korea on former institute work and will collect varieties of soybeans for us.

Mr. Lutz is keeping 4 cows and used Tszedega hay and also used ground soybeans for cattle feed.

At one of the Korean grocery stores we saw many and soybeans sprouts in jars. The beans had been sprouted in these jars and nothin pictures were taken of them.

on the street. B.

At the reger. Sta. Mr.
has gave me a publication
on soybeans relating to the
name and character of
a large number of varieties
of soybeans.

Sunday, Nov. 17, 1929.

Heigo, Korea -

Awoke about 7.15 and found it snowing hard. The ground was white. Began to warm up about 8.30 and had cleared by 9.30 A.M.

Mr. Puty came and took us out in the country to collect seed. We first visited the high hills on the outskirts of Heigo and obtained fine views of the country surrounding Heigo.

We went out in the mountain sections where we made collections of seed of various forage crops and ornamentals.

along the slope of a mtn.
about 20 miles from
Beijo and near Fusanmen
we collected seed of four
different *Lespedeza*s.

On some of the high
hills azaleas were found
in abundance and
considerable seed was
gathered.

Stops were made at
little Korean villages and
some native varieties of
soybeans were picked
up in this way. At the
various farm houses
soybean plants in bundles
were noted in piles. It
would seem that at this
time much of the soybean

Crop used as food and
cattle feed by the farmers
is still unthreshed.

Near one farm house
three men and a woman
were pounding a large
mass of rice bread dough
with large mallets on a
large thick flat stone.

After our trip we returned
to the home of Mr. Lutz and
then attended foreign
services in one of the school
buildings. About 150 people
most Americans were
in attendance. We met
Dr. McCune, President of
the Union Missionary
College who was formerly

President of the collegial
Kuron College, Kuron, S. Dak.

S., Kamiya
72 Kantokudo
Keijo chosen

Monday, Nov. 18, 1929,

Left Keijo.

2.31 P.M.

Arr. Keijo.

8.50 P.M.

R.R. fare (3rd) C. from Keijo
to Keijo, Chosen

Left about 9 A.M. and
went through the native
Korean grain markets in a
search for varieties of soybeans
and other seeds. Three vegetable
markets were also visited
and the market along the
river front.

Twenty-one samples of
soybeans were purchased
at the different Korean
grain stores, also samples
of buckwheat, barley, mung
beans, wheat, and castor beans.
Not very much buckwheat
was noticed at the various

markets. Millet, rice, soybeans
mung beans, and adzuki
beans predominated.

The samples of soybeans
observed in the various grain
stores were in all cases more
or less wilted and in some
cases very badly wilted. In
mung beans only one glossy
green sort was noticed. All
other sorts were dull green.

At the food stores bean
and in small blocks in
large open bowls. The small
blocks about 3×4 by $\frac{1}{2}$ in.
thick were in water. Mung
bean and soybean
sprouts in ^{large} earthen ware
in abundance. More ^{soybean}
sprouts were noted than
mung bean. The beans were

in earthen jars  in which they were sprouted. Pictures were taken of the sprouts and bean curd.

At the river front boat loads of radishes, Chinese cabbage, and also loads of fuel (pine branches, leaves, etc.) were in abundance.

Along one of the streets I noticed several Korean women making Kimchi. The Chinese cabbage is first wilted, washed thoroughly and then a mixture of small sliced turnips, ⁸peppers were was placed through the center of cabbages, mixed thoroughly. After packing these, the cabbages were

placed in the large earthen
casks or pots. Sometimes
clams, fish, meat, or
other seafood is placed in
the cabbage leaves. The pots
are placed in the yards
and left to cure.

On the way back Mr.
Lutz of the Union Christian
College, Keijo. Chosen rode
with us to Shariin where
he went to confer with Mr.
Cartwright concerning the
corn borer. From Shariin
to Keijo I rode with Mrs.
Rhodes who is wife of a
missionary teacher at the
M. E. Missionary college near
Seoul (Keijo). Mr. and Mrs.
Rhodes have been in
Korea since 1908, a year

previous to the taking over
by Japan. When they first
came to Korea they settled
at Kiyo (Ping Yang) and
the country - the hills
and mountains were
bare. With the advent of the
Japanese, reforestation
was begun and the hills
and mountains are now
well covered with pine.

Mrs. Rhodes said that
the Koreans did not use
soybeans as boiled beans
were ^{not} extensively used by
the Koreans as food. They
do use the yellow varieties
to some extent boiled
with millet or rice.

They considered soybeans
more as a cattle feed and
as such it is very widely
used.

For cattle or horse feed the
beans are thoroughly cooked
for an hour and then
poured scalding hot into
a trough. A little cold water
is added to reduce the heat,
and then beans, water,
and chopped straw are
stirred up together.

Arrived at Heijo at 8.50 P.M.
Taxi fare Hotel
to station, Heijo with 1 50
official baggage

Keijo. Chosen

Tuesday Nov. 19, 1929

Cloudy and cold. Keijo.

In the morning wrote my notes on beans bought in Korean grain stores at Keijo in the morning of yesterday.

Went after lunch to the American consulate to have expense account attended to (sworn to).

Later went to the Ewha College for Korean girls opposite the American Consulate where we met Miss Harriet Morris, graduate of Kansas Ag. Coll. and who is head of the Domestic Department at the college.

After our visit we

came back to room and
I worked on my pen
notes - especially with
regard to names of
native Korean varieties.

Wednesday, Nov. 20, 1929

Keijo. Chosen.

Cool and clear, Very hazy.
About 9.00 we went to
a large Hatto factory, a
short walk from the
Keijo Ry. Station. The factory
is run by a Japanese
man and wife.

At the time of our
arrival a large tub of
beans were being cooked
over slow heat from
a brick furnace. This
tub held several bushels
of cooked beans. The
Japanese were very
glad to see us and
willingly explained
the process of manufacture.

The beans, medium sized
yellow variety are first
soaked for 12 hours.
After soaking, the beans
are put in large tub
with water and are
boiled and steamed very
slowly for 7-9 hours.
The tub we saw was
a large thick wooden
tub and the top covered
with a thick rice
straw mat. At the time
of our visit the beans
were about through
cooking and we found
that they had cooked
quite tender.

After the beans are
boiled they are placed,
about a dozen

about handful, in a
rice straw container.
However, just previous
to the packing in the
straw container the
boiled beans are sprayed
with a bacterial solution.
After the beans are placed
in the rice straw container
they are placed in the
fermenting room.
This room is entered by
a low door. It is all in
one room and the sides
and top sided with
small ~~beams~~ bundles
of rice straw. The room
is about 8 feet high
and 5 feet from the
floor is a platform

covering about $\frac{9}{10}$ of the room. On the floor is a pot or jar of burning charcoal. The bundles of rice straw with boiled beans are placed on this platform.

The temperature of the room is kept from $40-45^{\circ}\text{C}$. Within this range of temperature, Natto is made in 20-24 hours. Over 50°C the temperature is too high for the bacteria to develop properly and produce a good quality of Natto, at this temperature Natto is made in about 15 hours but is of

poor quality.

After the period of 20-24 hours, the rice bundles are removed from the fermenting room and long ends of straw bent over and tied and the surplus straw ends cut off. A paper wrapper giving the analysis of Wotton compared with that of other foods is placed around the package and bound with rubber bands. The product is then ready for the market. These packages sell for 5 sen each.

Permission to obtain
motion pictures and
still pictures was secured.
The first shot was made
showing the tub in which
the beans are boiled from
7-9 hours. Next was
pictured the selection of
the rice straw stems
into small bundles for
making the rice straw
containers. The next
step was the making
and tying of the bundles.
Upon the completion
of the bundle, the boiled
beans, about a double
handful was placed
in the center of the
bundle and the
bundle then closed.

After the removal from
the fermenting room.
The long straw was
trimmed off leaving
a pack about 8 in. long
ready for the market.

The last scene taken
showed the various
steps in the bundling
of the beams to the Natto.

After the 7-9 hours
boiling, there is left in
the tub a thick brown
liquid, resembling
thickly boiled meat
juice. This without
doubt is a product
rich in soluble
proteins and carbohydrates.

It is a waste product
and not used. The wife
of the Japanese owner
tried to find some way
of utilizing this valuable
product. At first she
tried to make some
form of bean candy by
boiling with sugar.
Although a fair candy
was made, it was not
considered a success.
She now uses it in
place of water in making
wheat bread.

If there is sufficient
of this material, no
doubt a valuable product
could be made by the
addition of salt and
other flavorings and

biting down and
dehydrating to form
borellon cubes which
would as good if not
superior to any run on
the market.

A visit was made to
the Dai-ichi giuko of
Utsunomiya to cash a check
and bank draft. With
our passports and cards
from Mr. Stephan of the
American Consulate
it only took about half
an hour to get our
money.

Letters were sent to
Ryerson and Joe
Mahoney. Also our
deb. expense accounts
were mailed.

Official postage — 50

The Rice straw packages
of Natto sell for 5 sen
each.

Thursday, Nov. 21, 1929.

Keijo, Chosen.

Kirazu - } Wash left after
Unohana - } the making of
Kara - } sun cord
Yukihohana
(Yukihohana)

Natto Factory

- 1 - Rice straw
- 2 - Bottom drawing
- 3 - Upset for natto beans
- 4 - Filled with natto
- 5 - Folded over but not trimmed
- 6 - Package trimmed
- 7 - Packed with wrapper
- 8 - Without wrapper
- 9 - Box open with bottom
- 10 - Box closed as sold on market.

Japanese Lady Natto
Manufacturers.

Soak beans according to
temperature of water depending
on time of year that is
length of time of soaking.
Soaking from 6-10 hrs
according to temperature
of water. Quick way to soak
is with warm H_2O . If too
hot H_2O beans will be
spoiled.

Soaked beans are boiled
from 5-7 hours and not
under slow heat but are
boiled with coal less than
5 hours. With wood from
5-7 hours.

Temperature of fermenting
room ranges from $85^{\circ}-90^{\circ}$
F. Heat one of most important
factors in development of
Katon germ. Sometimes

goes to 95° . Beans stay
in fermenting room for
about 50 hours. No water
germs are added therefore
the long time for the making
of the water, the bacteria
coming from the rice straw.
Water left over from boiling
beans not used.

When boiled quickly do
not take out soluble proteins
& carbohydrates while
quickly boiling does not
take out so much from
the beans.

The lady tried using this
water for washing clothes
and found it very good.
Sample of seed used

in making this Natto
obtained two several
yellow varieties in it -
Seed quite glossy yellow.

We left about 10 A.M.
for the Natto factory which
is run by a Japanese
woman and which was
visited on an earlier
date. On arrival at the
place we found that
they were not ready
for pictures and would
like to have us return
about noon.

We went in another
section where scions were
obtained in a garden of
two different varieties
of persimmons.

We then returned to

the watto factory and found that things were arranged for pictures. Still and movies were taken of the preparing of the watto packages for market. Then other pictures were taken of the process of preparation of watto & the finished product. First the rice straw and the arrangement as shown at the notes beginning the date.

Still and movie were also taken of the making of the rice bundles for the watto which is quite different from

that seen at the other
matto factory, we were
each presented with a
wooden box of matto.

After lunch we went
to the central and
South Gate markets
where we were able to
pick up some more
varieties of soy beans
that had been brought
in since we last
visited these markets.

Official postage

60

Friday, Nov. 22, 1929

Keijo, Korea.

Very cold and clear. Stayed at Hotel in the morning writing up cards on seed collected previous day.

Also wrote official correspondence to Carter and Hollenell. Wrote Mr. Lutz at Union Christian College with regard to our recent visit there.

Looked over some Japanese bulletins and Dr. Takehashi's manuscript on Native Korean varieties of soybeans. Mr. Sijetah finished copying the varietal names and

The manuscript was
returned to Dr. Takahashi
at Shariin. Chosen.

In the evening after
supper, looked over many
pages of quarterly report.
Official postage

65

Sat Nov. 23, 1929

Cold - hazy -

Left Kyoto -

8.50 A.M.

Arr. Seikyoko

9.10 A.M.

Car fare Kyoto to ... (3rd)

At the Grain Laboratory
100,000 sacks exported of the
4th grade. About 65,000
bags of the 3rd grade. Very
few 1st grade beans found
and but slightly more
of the 2nd grain. The beans
are brought to this port
nearly all by river boats
grain lab. inspection
carried on at points
of production. Not more
than 10,000 sacks of the
1st & 2nd grade, 1st and 2nd
grades are made for

of the larger varieties while
the 3rd and 4th grades
are made up of medium
sized beans. Even at the
grain inspection places
have we seen anything
but yellow seeded varieties.
The beans are exported
the main island, China
Philippines.

The yellow beans are used
for miso, natto, bean
curd, soy sauce.

The black beans are generally
used mixed with rice
in cooking or cooked
alone.

The green seeded varieties
are generally exported to
the main island and
the Kyushu islands for
green bean use purposes.

The brown seeded varieties
are used in the same way
as the black beans for
cooking mixed with rice
or cooked alone.

For cattle feeding the
beans that do not pass
grades are used.

The prices this year at
Seihyoko, Chosen.

On Oct. 1

20 Yen per Koku - 1st Gr.

On Oct 15 - Nov. 1

18.20 per Koku - 1st Gr.

On Nov. 15

16.20 yen per Koku - 1st Gr.

There is 40 sen difference
between each of the grades
Nov. 23.

16.20 yen per Koku 1st Gr.

15.80	"	"	2 nd G
15.40	"	"	3 rd G
15.00	"	"	4 th G

at beginning of Oct. 1st
grade rice was 30 yen per
Koban white rice (Nov. 23)
1st grade rice sells for
27 yen per Koban.

No excellent grades of
raybrans received. Only
way is hand picking.

Arriving at Seihyoko.
two stations from Kago
we went to the river
front where they were
unloading bags of raybrans
from river boats that
had come down the Kanko
river from interior
points. These rice straw
bags of brans, graded at
the point of loading.

were being taken off the
boats and carried on
the backs of Korean
labors up a steep
bank to warehouses
of grain merchants.

We then went to the office
of the grain inspection
where we met some of the
inspectors who gave us
the information written
at the beginning of this
day's diary.

We were shown the
varieties of soy beans
most commonly brought
in this port by boats
from interior points
along rivers. Samples

are given only commercial
names. Seed samples
of the four grades of
Rugzati were given us
for sending to America.
One of the inspectors
accompanied us to
the warehouses of two
Korean grain merchants
where we obtained some
samples of varieties held
by them. At this time
the warehouses were well
filled with rice straw
bags of anykams.

After our visit to the
merchants, we decided
to walk to Ugyri and
collect as we went along
the way.

At one point along
the river we noticed

pine boughs for fuel
in great abundance.
Four large bundles
on the backs of oxen,
2-3 oxen were being
forned across in one
boat and there were
many boats going and
coming across the river.
We found that each
bundle of pine boughs
retained for 1 year each,
thus four years to the
ox. From the great amount
of pine boughs we have
seen piled up in farm
yards and being trans-
ported to villages and
cities by oxen and man

since our arrival in Korea, it would not seem that there would be many pine trees left.

Near Kanko, beside the river Kanko, we found a *Lespedeza* sp. 8-15 inches high, growing quite abundantly on a steep, rocky dry hillside. Picture was made of a considerable bunch of plants in its natural setting. Seed was gathered of this species and also of two tall growing grasses, one of which no doubt is an *Andropogon* sp. and used extensively by the Japanese in their flower arrangement.

and also for making
grass mats.

Arriving at the village
of Ujuir we bought
some samples of soy-
beans from a Korean
grain merchant.

Had lunch of mung
bean noodle fried
in chop suey style at
a little Chinese lunch
room.

Took street car in
Ujuir and came to
South gate market
in Keijo where we looked
over the various grains
and beans. Although
there were numerous

varieties of ray bones,
adulterated and unguis.
we saw nothing that
apparently we had not
purchased in previous
visits.

Sunday, Nov. 24, 1929

Keijo, Chosen. ^{Sweet} ~~Whinn~~ 10/11, 188

Cloudy and cold. In the morning worked on official correspondence, and also wrote up notes on Korean varietal names of soybean varieties.

Wrote Oakley concerning our field operations in Korea thus far, and also asked that seed of winter vetches and the Austrian winter pea be sent to Mr. D. N. Lutz.

Union Christian College.

Keijo, Chosen.

Also asked Oakley to send to Dr. N. Takahashi, West Korean Agr. Exp. Sta.

Sharinn. Chosen. on
copy of the syphon variety
note book and the bull.
on the refractometer method
of determining the oil
content of small amount
of syphon seed.

Mr. Durrell was taken
sick with a cold yesterday
and spent this morning
in bed. He was up about
noon, and ready to start
on the trip to northeastern
Korea tomorrow.

Met Dr. Takahashi of the
Sharinn exp. Sta. on the street.
He expects to be at the Sungen
station tomorrow, so I will
go there for a conference on
syphons with him and
Dr. Nagai (of the Sungen Sta.)

Monday, Nov. 25, 1929.

Kengo - Special messenger	60
Suzgen	
Cold and cloud. Brown flowers	
Left Kengo	8 42
Arr. Suzgen	9 50
Yf. Suzgen	5 24
Ar. Kengo	6 30
Taxi cab. station Ryōsen 2	1 00
1st. car fare A Sta. Kengo	10
Taxi from A. Hotel	1 00
Ryōsen Kengo to Suzgen (3) 2	1.30
Suzgen to Kengo (3) 2	1.30

Dr. Naigai (Small or. Nagai colored
mature cherry blossom)

Suzgen Expt. Sta.

Suzgen. Chosen

Samples of wild rice from
Minnesota and Virginia.

Zizania aquatica (wild rice)

Syntherisma selectivus B
promiss.

On the way to Suzgen.

to begin to harvest and
sow. When we got off the
train we found it rather
raw. It continued raining
and raining during the
morning. According to
Dr. Nagai

Hardy ratches. -

Sudan Grass -

Blue Grass -

Dalla -

Agrostis canina -

Up to noon I talked
with Dr. Nagai with regard
to soy beans in Korea and
the U.S. The native Korean
varieties as grown by the
Korean farmer are all badly
mixed. The experiment station
is working on pure line
varieties but as yet have
none to introduce to the

farmer. The Korean Govt
has a 5 year plan whereby
they plan to change the
varieties. one crop each year
for 5 years of the five
principal crops. The seed
is furnished the farmer
free of charge. This method
has been found rather
expensive and not very
successful. The gov't. has
also a plan of having the
farmer grow alfalfa on
a green manure basis.
The farmer is to grow
1 ton ($\frac{1}{4}$ acre) for which
the farmer is given the
seed, fertilizers and the
year. The alfalfa is cut

four times a year and the green material used as a green manure crop. This has not proved very successful as few farmers take advantage of it.

At noon a banquet was held in one of the station buildings for officials and the prize-winning Korean tenant farmers of the station, Mr. Inyeta and I were invited to the dinner which was rather Japanese.

1. Miso soup with boiled carp from the experimental station's lake.
2. Slices of beef in butter and fried in oil.
3. Chinese cabbage pickled in soy sauce.

3. A - Pickled octopus.
4. Rolls of gelatinome sealed
with small herring inside
5. Hot sake
6. Raw sliced fish garnished
with sliced udo. Carrot
~~and~~ slice with horse-
radish in center.
7. Barbecued carp.
8. Rice
9. Apples.
10. Tea
11. Tea with sugar
12. Green spinach pickled
with soy sauce.

Dr. Nagai advised that
the samples of soybeans
which he promised me
were ready. We spent
some time in going.

over these numbers which run from 1-1001. The same numbers as used in the station's record book. The varietal names were not given in all cases but will be given as later. The numbers to be given with the varietal names will correspond with the letter and number on the package's grinders.

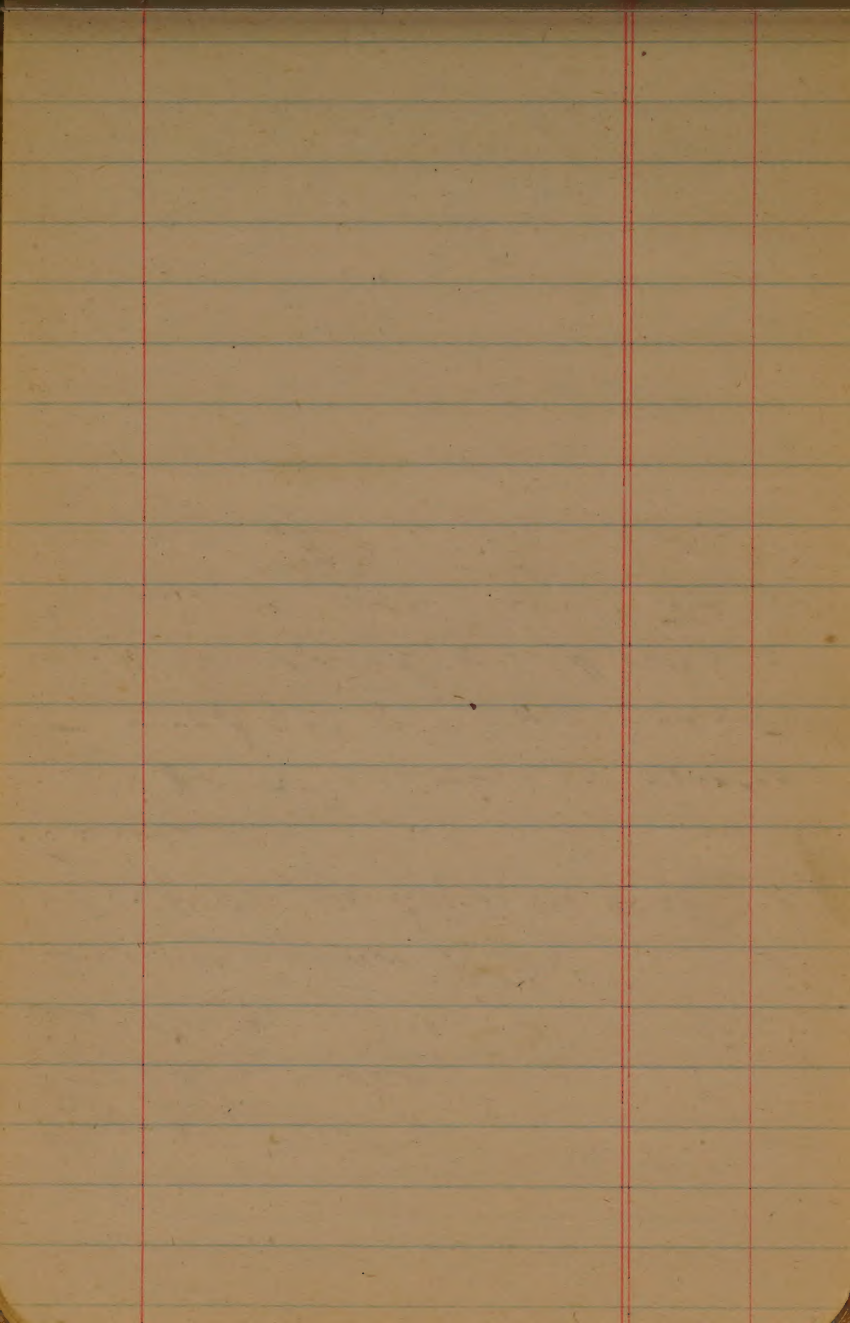
The following list shows the number of packages of each group received based on plant and seed characters.

I- Color of leaves - green	101
II- Black seed	148
III- Brown seed	85
IV- Indigo (Bluish green) seed	30
V- Greenish yellow	59
VI- Mottled or bicolored seed	41

$$\begin{array}{r} 539 \\ 464 \\ \hline 1003 \end{array}$$

VII - Yellow seed	347
VI - Five leaved varieties	9
V - Echo Exp. Sta. Varieties	20
IV - Miscellaneous varieties	97
III - Native named Korean varieties	66
Total	1003

The packets of seed were placed in empty 10 gallon gasoline boxes and completely filled two such boxes. We were taken to the station by the station car.



Tuesday, Nov. 26, 1929

coll & clear

Postage - Mienai

46

Left Keijo

8:50 AM

Arr. Gungu

3:36 P.M.

Ry-fare Keijo to Tanzen (3rd)

8 40

Left Keijo at 8:50 A.M. for
Gungu said to be a most
important soybean center
in the northwestern
part of Korea and where
the larger grained varieties
are grown.

Beyond Rensen where
we had gone on a previous
soybean trip, the country
was rather barren and
barren. There seems
to be considerable corn
grown between Rensen
and Gungu. From the

appearance of the stalls
and fields. It would seem
~~that~~ the corn borer is more
or less prevalent.

Arriving at Genzan at
3.30 P. M. we were met at the
station both by military
police and by secret service.
Genzan is in a fortified
zone, and permission to
take pictures must be had
from the military police.
After a visit to the Chun
went to the Korean grain
stores and market. The
sorghums banded were
largely of the black variety.
Two stores had yellow
varieties.

At a Korean merchants
warehouse, there was quite
a force of men grading

soybeans with screens
of different sized mesh.
Four grades were being
made - Excellent (the
largest seed), 1st grade (the
next largest seed), 2nd
and 3rd grades. The screens
were like those used in
America for screening
sand. A flat or box arrangement
fastened with a rope to a
standard. The box had
handles and the box was
shaken by the operator
and after the smaller
seed were screened out,
the large seed thrown in
the grade pile. Samples of
seed of the four grades
were given us by the merchant.

7 other samples of seed
were collected.

On our way to the inn
we saw in a store, large
amounts of soybean sprouts
and two Korean women
preparing more beans for
sprouting. A sample of
these beans were obtained,
and although yellow seed
were very badly mixed.
Beans varied in size,
shape, and color of hilum.

Samples were written
up at night. Not many
varieties were collected. A
third sample of mung had
more or less of the Golden
Mung bean. One sample of
adzuki was badly mixed but
had many very interesting
varieties in it.

Wednesday, Nov. 27, 1929

Cold and clear.

Guizan. Choseir.

Left by bus for Ouseiri at
10.00 A.M. for the base of Mt.
Kongo in the Diamond
Mtns.

Bus fare - Guizan to

4 70

Arrived at Ouseiri 3.30 P.M.

After considerable delay
we left by bus along the
coast and mountain
road for Ouseiri at the
base of Mt. Kongo in
the Diamond mountains.

Very few soybeans
were noted along the
way, that is the
grain stores and in
most farmers' yards.

The beans were stacked
up in bundles ready
for threshing. Several
of carts of soybean sacks
were not going to
market.

We stopped at the small
Korean village of
where we went for
lunch. After lunch
we went out through
mountain roads to
Unseiri, arriving there
about 3.30 P.M.

After engaging rooms
at the Inn, we
went up one of the mtn.
trails collecting seed.
Azalea seed was found
in abundance. At
one point along the
trail we found

considerable hedge
with pods with some
ripe seed. Much hedge
was seen but little seed
pods.

Two forms of hedge
were found but both
of the short bush type
had very little seed.

One species of Golden
Bell (*Forsythia*) was
found and in some
places, especially along
streams it was found
in abundance and
much seed was collected.
This may be a white
flowered species as the
assistant manager of
the inn said that

The white flowered form
occurred about here.

Thursday. Nov. 28, 1929

Unseiri, Chosen.

Clear and mild. About 8.30 we went to the office of Mr. Ikemura, assistant forestry engineer who has charge of this region. He is to go with us on a seed collecting trip in the mountain regions.

With a Korean coolie to carry our cameras we went up one of the mtn. trails to collect seed of such wild plants as we could find. Azaleas of two species, one a fire-pearl shrub (possibly *quinguefolia*), was very abundant and an abundance of seed could

have been gathered but
sufficient was gathered
of these yesterday. Seed
of two species of the woody
type of lespedeza was
collected. We learned that
the stems of the taller of
these is used extensively
for making woven fences
and also with other wood-
work for ornamental purposes.
Wild lilacs were growing
fairly abundant but the
seed collected looks poor.
This tree grows 3-5 ft high,
has white flowers, and the
forester said that they
were very fragrant.

Two species of lilacs are
said to in this section
and seed of one was
found. Wrightia seed

was also found in abundance.

We scaled one mountain peak, where we had lunch. We descended by another trail. Seed of 2 wild species was collected. Kudzu was found growing at various places along the trail and bore long clusters of pods. Considerable seed was mature and some gathered for comparison with that collected from other parts of Japan and Korea.

After this we went up to another mountain peak and going up and coming down we were

able to collect a little
seed. We found the matter
of collecting seed rather
difficult owing to the
lateness of the season
and the manner in which
the Koreans cut the shrubs
and rake the ground for
fuel.

We had Mr. Okumura
at dinner with us, and
he promised to send us
next fall of the
Azaleas, lilies, rhododendrons,
lilacs, white forsythia,
and a perennial bean
with black seeds.

Friday, Nov 29, 1929.

Cloudy and mild.

Left Anseuri for Genzan
by bus at 8:30 A.M.

Bus fare Anseuri to
Genzan.

5 60

Arrived at Genzan 3:00 P.M.

In the way we stopped at
Kote for lunch and found
a chance to visit a grain
merchant where we obtained
four samples of soybeans.
Along the way it was
noted that Korean farmers
use threshing and cleaning
soybeans in the farm yards.
Arriving at Genzan about
3:30 P.M., we went at once to
military police head-
quarters for permission
to take some soybean

pictures. Permission had to be obtained from the commanding officer.

Mr. Snyetake went to head quarters and two officers came back with him. We went to the soybean grain merchant to get pictures of clearing and grading soybeans. Samples of seed of the different grades were obtained from this merchant Wednesday. The officers were very particular as to the background of the pictures. Unless the islands and ^{not} mountains were in the pictures, everything was O.K. But if either were in print of the picture had to be submitted to the officers for examination.

After taking more and stills, we took our cameras back to the hotel, and then visited a park but found nothing of interest except a beautiful view of the surrounding country and sea.

We then went to the shipping wharves where we found large quantities of soybeans which had been brought from interior sections by river boats. The beans were being graded according to size - the large grains being in the excellent and 1st grades and the others into 2nd, 3rd and 4th grades.

Most of the beans were
in the 3rd and fourth
grades. These beans were
being cracked for export
to the main island for
the manufacture of bean
curd, soy sauce, miso,
and natto. The export of
beans from this port is
yearly increasing especially
to the Tokio section. The
beans are exported to Osaka,
Moji, Kobe, Shimonoeki,
and Tokio.

During the last nine
days 150,000 bushels (about
650,000 bushels were
shipped from the Yagami
port to the above mentioned
ports. This beans were
valued at 2,000,000 yen,

which at the present
rate of exchange (1 yen = 49 cts)
would be \$775,000. or about
\$1.50 per bushel. It is said
that the beans from this
section are becoming noted
for their excellent quality
in making bean curd, soy
sauce, miso, and natto.

As the shipping points
and grading places
were all of yellow varieties
but more or less mixed.
Even the samples of
excellent and first grades
were found more or less
mixed. The size of the
seed, from graded with
screens, would be uniform
but the color of the hilum

of the seed varied. The greater part of the seed would be with pale tubercles and a small admixture of seed with pale brown tubercles was present. Truly occasionally would one find a black variety at the shipping places. In the grain stores in the villages or cities one would find black and brown beans at any place.

Saturday, Nov. 30, 1929

min. -16°C

Clear and mild.

Left Gungah, Chosen 6.45 AM

Arr. Tansen, Chosen 3.05

Rather dark when we left.

Tansen. 40^{1/2} N. L.

Plant late in May

Harvest in Oct.

Max. time of shipping is
in Feb.

Planted along side of
barley or ~~wheat~~ rows.

Hills - 14 in. apart and
3-4 grains to hills

No fertilizers added
to any rows but fertilizers
used for barley or ~~wheat~~.

Compost with ashes is
used for wheat or barley
just before barley or
~~wheat~~ is planted.

Cultivation. Weeding one or twice after barley is harvested.

Planting is done with short handled hoe as shown in movie taken at Sharira.

Yield per $4\frac{1}{4}$ - 5 bush per $\frac{1}{4}$ acre.

Barley is sown about the beginning of April and harvested the beginning of Aug.

Farmers receive average about 14-15 yen per Koku.

The plants are harvested by cutting with sickle.

Sometimes the farmers put the stubble for fuel. This is also done with millet and sorghum stubble.

In 1928 in this Tansen
 region - 3 principal varieties
 38,700 Koken beans in Co. 1928
 66,740 " " " " 1927
 45,236 " " " " 1926
 61,538 " " " " 1925
 29,764 " " " " 1924 very bad crops
 51,000 " " " " 1929 (estimated)

8,000 & 10,000 also given
 to say beans in this county
 which represents about
 30 % of total cultivated land.

The value of crops in
 this co. say beans. local.

Three principal varieties
 grown in this region

- 1 - Tanchon - greenish yellow
- 2 - Liarikon - large yellow
- 3 - Uruzibarnkon

The beans are threshed

by flailing, after being cut the plants are bound in bundles and carried to the farmer's home yard and piled or ricked up. The beans are then threshed out on good days as this time some farmers were still threshing out the beans but for the most part in the villages visited the plants were still stacked up in the farm-yards.

Arriving at Tansen at 3.05 P. M. we went at once to an inn and left our luggage. We then went to the farmers' market nearby where we picked up three samples of soy beans, two greenish yellow similar

to the Tansen variety which
is very similar to our
Anson and Tokio. One
sample was badly riped
and was called unriped. This
is used as boiled beans in
the home with other foods
and also boiled as a
cattle feed. There were
large numbers of fish
in the market of various
kinds.

After visiting the market
we looked for grain stores
in other parts of town
but found nothing but
ground grains.

We then went out in
the country passing thru
a Korean village where

we found stacks of bundles
of soybeans in the farm
yards. They were mostly
of the greenish yellow variety.

The shipping port was
said to be about 4 miles
from the village. As we
walked near the railroad
we saw considerable of
the long-growing (Korean)
lespedeza but only a little
seed was found as the banks
had been rather thoroughly
raked. This collection of
lespedeza may be of value
coming from so far north,
 $40\frac{1}{2}^{\circ}$ N. Lat.

After gathering the seed we
came to another Korean
village, and when looking over
a pile of soybeans, an old
Korean woman mentioned

for us to come with her. At
her home she brought out a
small gourd of greenish yellow
soybeans, and then another
of a different variety. She gave
us samples of each. We then
went to another farm house
and obtained another lot of
soybeans. The old Korean woman
came again with a handful
of very small black soybeans
like the Kingston which she
gave us. As it was getting
dark, we went back to the
inn.

In the evening after
supper, three men from
the county agricultural
society called upon us
and gave us much.

information concerning
the soybean in this
County. As the farmers
have not thrashed out
the beans there is not
much soybean activity
as yet. There is not much
shipping of soybeans
until February.

Sunday, Dec. 1, 1929

Tansen, Chosen

Left Tansen

2

294

Mr. Keijo

R.R. fare Tansen^(3C) to Kanko

Kanko to Keijo (2nd)

Sleeping car 1 Kanko

to Keijo (2nd C)

Cold and partly cloudy.

In the morning about 9 AM.

we went to the county Agr.

Society headquarters where

we were to be shown samples

of soybeans of the county

and one of the officials was

to accompany us to some

of the Korean villages to

collect samples of beans.

Kumamoto Pref. (Kumamoto Is.)

imports from Tansen seed of

the Tanchu var. for over 30,000 cho

for use as green manure in
paddy fields, orchards, mulberry
and tea plantations. Over 10,000
cho of Tanchu grown in Fukuoka
and Kagoshima prefectures in the
Kysu Islands. 5000-10000 cho
grown of Tanchu var. in three
prefectures of main island Gunma,
Yamanashi, Shizuoka, and Saga.
prefecture of Kysu Islands. In paddy
fields 27000 cho of paddy fields are
planted with Tanchu. Mulberry
plantations - 6,500 cho; Tea gardens,
1000 cho; pear orchards, 370 cho; citrus
orchards - 1,000 cho; other orchards, 2000 cho
bamboo forestry, - 1000 cho. - Total
used - 111,870 cho for green manure.

With one of the agr. society men
we visited several small Korean
hamlets near Tansen. Nearly
all of the farmers had their
bundles of soy beans stacked

type in the yards. A number
 of samples of beans were secured
 but for the most part the beans
 we saw in the different farm
 yards were of the Tanchon variety.
 The market was also visited
 but no new varieties were seen.

Sungtahr	50	00
"	10	00

Super-Kanko to Keijo (2nd)
 R.R. fare " " " (2nd)

Chinese pepper leaves
used for garnish and
flavoring and all kinds
of cooking.

Dec. 2 - 1929.

Arrived Keijo.

7.15 AM.

Japanese Green Junos
Yellow buds used for
flavoring for soups or
any hot dish.

Citrus aurantium
Water Shield

Young leaves used as
in Gumbo soups.

Green plums.

used for pickling and
for brandy.

Radish Sprouts

used for soup or garnish
ing and green leaves for
soup.

Young pepper plant

used for flavoring.

Matsuma

Boil or use for garnish

Turdock root,

cook like carrots,
fry or boil in

Perilla

Red or purple used as
dye for Japanese plum.
Curled leaves and smooth

Green one used for garnish-
ing and flavoring. Flower
stalk or shoot for making
pickle. Flat + curled.

Gily Bulbs.

Boil and crease like
onions.

Tansen - Chosen - Dec. 1, 1929.

Going out in the country
shortly after nine o'clock
we met the Korean men
and women coming to
the market in Tansen.
Considerable bundles of
fuel were being brought
in. Women with babies
on their backs and
large bundles of fuel,
generally pine boughs on
their heads were trudging
along. All sorts of products
were being brought to the
market and in all
cases, the loads carried
by the women were on
(next page)

Broad or Horse Bean

The beans when grown are used as the green lima beans. The dried beans are used as roasted beans and in making candied beans by boiling in syrup.

Tamson, Dec. 6/929.

Their heads. Sometimes one would see a woman with baby on her back, a load on her head, driving an ox with a wheel of pine foughe on its back. Some of the women had singly straw shoes on their feet. One young woman with a large bundle had one shoe on and

Crown Daisy or Edible
Chrysanthemum

Use young leaves for
garnishing or flavoring soups
use like spinach

Tamsum, Dec. 1, 1929.

The back of the other foot
with no shoe, was worn
raw from the straw
shoe.

At the market place in
Tamsum, all sorts of food
products and articles
were on sale. Rather an
interesting feature was
the women sitting in
the large round baskets
and their wares spread
before them. In one
case, a woman had
two pots of bean curd

Lotus Root

Used for cooking and making candy. Cook like carrots chop in small pieces. For making salads boil, peel, slice and use dressing. Used in chop suey.

Tansen, Dec. 1, 1929,
in northern parts of
water. Several had pots
of soybean sprouts. Others
had gourds and baskets
of dry soybeans and
adzuki beans, and
often a small gourd
of soaked soybeans.

Celery - Brown outside
When young is very tender
color very green so people
use same as forced celery.

It is sown outdoors in rows
thickly and when about 4 or
5 in. high, pulled out and
packed flatly in bunches about
5 in. wide and tied with rice
straw.

Snyderman Prices, Nov. 25, 1929.

Chosen -

Ryuzan var. - 146 08. per koku

Chotan " 15.20 " "

Rensen " 15.20 " "

Tetsugen 15.20 " "

Bamboo Shoot.

Boil at once - with white water
and cook anyway:

Sea Parsnips

used as flavoring for soups

Forced Ginger.

Udo

make deeper trench than for
celery.

Generally boiled and creamed
or as a salad.

Young Fern Fronds.

Eatable fern or Common brake

Pick when about a foot high
Soak in water at once and
after boil in wood ashes water
and use as spinach. One
gallon water about 20 min. drain
wash in cold water and use any
way.

Horseradish.

Stems grown in shade and cool hillsides. Keep till till 4 or 5 in. peel skin off and slice and use as flavoring or as a pickle.

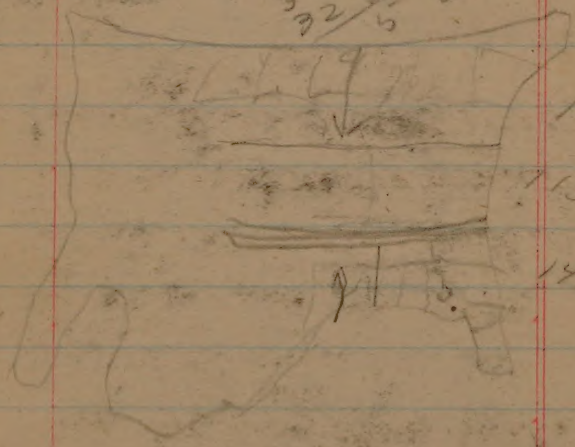
Mushrooms.

49 200,000.00

X9 9,000.00

98,000.00

650,000
65) 98,000
65
330
325
5



90
115

115-145

145-175

Eatall Chrysanthemum Petals

Before flower is open, pick the petals and keep in shady place. When dry keep in bag and soak in water, wash well cook any way you wish. Boil and make vegetable salad with mayonaisse or oil. Sometimes fry. dip in ^{flour} egg and crumbs.

Pick leaves when full grown wash well, drain well and put in flour, then soak in white of egg and ^{dip} next crumbs, and fry in deep fat.

Spinach

Source

Date

Place

Original No. - Native name

Seed size, color, glaucous, liliaceous

Native name

Ginger

Planted in sandy soil from mid. of Apr. to end of Apr. When it sprouts could be used for flavoring of all kinds of food, in soups

Forced Ginger

^{trench}
Make about 3 ft. wide 3 ft. deep + 6 ft. long, put about $1\frac{1}{2}$ ft. manure in bottom, then sandy loam soil about 5 in. deep. After set^g ginger roots on top of soil and spray sand on roots till all covered. In about 5 wks. it will start and when about 5 or 7 in. high cut and use for flavoring for veg. dishes or boil and use same as spinach also can make into salad. Another kind of g. root is called Zingiber Mioga

1971½

Celery - Forced

Used as flavoring in salads or after boiling use as a green as spinach or eaten like celery. Sometimes used for decoration for vegetable dish. The green leaves are used for soups in place of parsley.

It is sowed outdoors in rows very thinly, let it grow until fall and when frost touches 1 or 2. Then in a separate place about wide and $2\frac{1}{2}$ ft. deep and about 6 ft. long put about 1 ft. thick manure, cover with loam soil. Then plant roots right in this trench very thickly. Cover with mat at 60 to 65° for about 4 or 5 wks.

